

ABSTRACT OF THE DISCLOSURE

This invention relates to regeneration of coked catalyst by combustion so that the catalyst can be reused in a hydrocarbon conversion reaction. The completion of coke burn is generally measured with a combination of temperature or change in oxygen
5 concentration. Dropping outlet temperatures require time to wait for increases in inlet temperature to correspondingly move down the regenerator. Faster response times might be expected from increasing oxygen concentration, but a small increase in concentration can lead to a significant increase in peak burn temperature which negatively impacts catalyst life. Controlled peak burning is difficult over the entire bed by merely controlling
10 inlet and outlet oxygen concentrations. The invention accordingly combines a measured lag time for temperature travel with an inlet temperature ramping step to ensure complete coke combustion with high oxygen efficiency, thus providing a rapid regeneration that permits more time for operation at desired reaction conditions.